Space Weather Forecast

Issued on Saturday, 05 November 2022 at 12:09 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: Slight chance minor geomagnetic storms days 3 and 4 (7 and 8 Nov).

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity has been Low over through the last 24 hours, with a few low energy Common-class flares. There are now eight sunspot region on the visible disc. The two most prominent regions have recently rotated onto the northeast quadrant. No Earth-directed CMEs (coronal mass ejections) have been observed on available imagery.

Solar Wind / Geomagnetic Activity: The solar wind is showing ongoing but declining effects from a fast wind, with near elevated levels of 500 km/s. Total magnetic field strength has been weak throughout, with the important north-south component also varying weakly. Geomagnetic activity has been at quiet to unsettled levels.

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) remained at background levels with no solar radiation storms observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Solar activity is forecast to be mainly Low, with a slight but probably increasing chance of Moderate activity due to developing regions on the visible disc.

Solar Wind / Geomagnetic Activity: No Earth directed CMEs are forecast. The current fast wind is expected to decline to Low levels by the end of day 2 (6 Nov). A further fast wind may then connect with the Earth either later on day 3 (7 Nov) or during day 4 (8 Nov), although there is low confidence in the strength of any connection. Geomagnetic activity is expected to continue quiet to unsettled with a slight chance of active or minor geomagnetic storm intervals late on day 3 or during day 4.(7 or 8 Nov).

Energetic Particles / Solar Radiation: The count rate of energetic particles (High energy protons) is forecast to persist at background with no solar radiation storms occurring.

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Met Office Space Weather Forecast

Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	1	1	10	10
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	15	15	15	15
Very Active	R3 to R5 X	No	1	1	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	1	1	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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